

**REMARKS**

Claims 18, 19 and 20 have been amended to recite that the pH adjustor adjusts the hydrogen ion exponent pH of the grease composition within a range of 5 to 9.6. Support is found, for example, in Table 1 at page 49 (upper limit of 9.6) and the description at page 36, paragraph [111], lines 15-17 of the substitute specification (lower limit of 5).

Claim 18 has also been amended to recite that the amount of the pH adjustor is 0.01 to 12% by weight based on the total amount of the grease composition. Support is found, for example, in Table 1 at page 49 of the substitute specification.

Review and reconsideration on the merits are requested.

Claims 18-24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Yokouchi et al., JP-A-9-169989 in view of Heimann et al., U.S. Patent No. 6,010,984.

The Examiner maintained that a person having ordinary skill in the art, armed with the disclosure of Heimann, would have found it obvious to add a pH adjustor to the grease composition of Yokouchi in order to adjust the pH to “about 7 to about 14,” and to tailor the grease to be compatible with the metal surface which contacts the grease, with a reasonable expectation of enhancing corrosion resistance.

Applicants traverse, and respectfully request the Examiner to reconsider in view of the amendment to the claims and the following remarks.

The amended claims call for a pH adjustor for adjusting a hydrogen ion exponent pH of the grease composition within a narrow range of 5 to 9.6 for use in combination with the specific grease composition of the invention. The broad range of “about 7 to about 14” disclosed by

Heimann does not describe the narrowly claimed range. Furthermore, Heimann bridging cols. 5-6 also does not disclose the amount of the pH adjustor as required by amended claim 18.

From a different perspective, Yokouchi does not teach or suggest use of a grease composition comprising a pH adjustor, as recited in Applicants' claims 18-20. On the other hand, the grease compositions of Heimann et al and Yokouchi sufficiently differ such that one skilled in the art would not contemplate addition of a pH adjustor to the grease composition of Yokouchi with a reasonable expectation of success. In this regard, Heimann et al is entirely silent with respect to application to a rolling bearing which is the subject matter of the present claims. See col. 9, lines 9-30 of Heimann et al. Application to pipes, cables and battery terminals as taught by Heimann et al does not instruct, disclose or otherwise suggest application to a rolling bearing.

Withdrawal of the foregoing rejection is respectfully requested.

Claims 18-24 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Naka et al., U.S. Patent No. 5,728,659 ("Naka") in view of Heimann et al., U.S. Patent No. 6,010,984 ("Heimann") and Yokouchi et al., JP-A-90169989 ("Yokouchi").

The Examiner maintained that it would have been obvious to add a pH adjustor as taught by Heimann to the grease composition of Naka for the same reasons as noted above.

Applicants traverse the rejection for the same reasons as set forth above with respect to the rejection over Yokouchi in view of Heimann et al. Particularly, the disclosure in Heimann et al in no manner leads one skilled in the art to employ a pH adjustor in a grease composition of a rolling bearing, let alone a pH adjustor for adjusting a hydrogen ion exponent pH of the grease

composition within a narrowly claimed range of 5 to 9.6 (as claimed in claims 18-20) and in an amount of 0.01 to 12% by weight as required by amended claim 18. Applicants do not claim a grease composition *per se*, but rather a rolling bearing having a grease composition sealed into the annular space formed by the rolling elements and the races. Table 5 at page 68 of the substitute specification shows criticality in the pH of the grease in providing good durability and in retarding grease leakage. Namely, a pH below 5 (Comparative Examples 81 and 82) did not provide the desired durability. As described in paragraph [189], “However, because the hydrogen ion exponent pH is as low as 4.2 or 4.8, not all the samples secured a bearing life L exceeding the rated life  $L_{10}$ .” On the other hand, as described in paragraph [190], in Examples 31 to 41, where a diurea compound containing an aromatic amine was added to the lubricant as a thickener and also the hydrogen ion exponent pH was adjusted to or above 5, i.e., between 5.1 and 8.0, all the samples tested secured a bearing life L longer than or equal to the rated life  $L_{10}$ , proving to satisfy the desired durability.

Withdrawal of the foregoing rejection is respectfully requested.

Withdrawal of all rejections and allowance of claims 18-20 is earnestly solicited.

In the event that the Examiner believes that it may be helpful to advance the prosecution of this application, the Examiner is invited to contact the undersigned at the local Washington, D.C. telephone number indicated below.

AMENDMENT UNDER 37 C.F.R. § 1.114(c)  
U.S. Application No.: 10/091,394

Attorney Docket No.: Q68888

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Respectfully submitted,



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